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Explore the Future of Training Technologies with Innovators and Collaborators

OVERVIEW

Approximately twice per year, the Advanced Technology Integration Group (ATIG) at NASA's Johnson Space Center hosts technology-focused events. **Join us for the upcoming event, Training for Tomorrow 2004!**

Who:	*Developers and users of training technology from NASA, the Department of Defense, other government agencies/laboratories, academia, and industry (limited to 100)*
What:	*A small-scale, invitation-only, technology-focused event*
Where:	*Houston, Texas (near NASA Johnson Space Center)*
When:	*Wednesday, October 27 and Thursday, October 28, 2004*
Why:	*To explore the future of training technologies by educating the community about government needs and current programs and by encouraging networking and collaborations*
How:	*Participants and speakers do NOT pay any registration fee; go to the Training 2004 page to request your invitation now*

▶ **Check the event page for news: http://advtech.jsc.nasa.gov/t4t04.asp**

OBJECTIVES

The ATIG and its co-chair, the Advanced Operations and Development Division of NASA's Johnson Space Center (JSC) are proud to announce a new event, Training for Tomorrow 2004.

Training 2004 will focus on advanced training technologies for NASA and the US Department of Defense (DoD). The DoD and NASA's needs for training systems overlap almost completely. NASA requires both ground-based and in-flight training for future long-duration or long-distance human missions to the Moon or Mars. Both DoD and NASA need individual and team training systems, especially those that provide an individualized, lifelike tutoring experience.

These same technologies could also be a boon to the American workforce, strengthening knowledge enhancement and helping preserve the United States as the world's economic powerhouse among mounting competition.

The goals of the event are to:

- **educate the outside community** about government needs and current government programs in advanced learning technologies,
- **encourage networking and collaborations** between attendees that foster the next generation of advancements in training technologies, and
- **explore the future** of advanced training technologies with an expert community.

The next generation of training technologies must draw from diverse fields, including human factors, artificial intelligence, instructional design, and engineering.

Although the event program is not finalized, Training 2004 will be organized as follows:

- **DAY 1:** Plenary session on government programs, specific technology needs, or emerging capabilities with talks by government program managers, scientists, and engineers. Talks will be broad in scope, covering many needs and technologies, rather than reports on a single technology or study.
- **DAY 2:** Sessions on specific technology solutions or on new applications of existing technologies.

PARTICIPATE

Training 2004 will be a small-scale event that focuses on high-quality networking and discussion. The event facility allows for 100 participants, so we seek equivalent representation from:

- NASA,
- DoD or other government agencies,
- academic researchers and technology developers, and
- the commercial world.

WHO SHOULD ATTEND?

- Technology developers and users involved in the next generation of training
- Students earning degrees in related fields and considering a career in training development and technologies

With limited space and a focus on high-quality networking, Training 2004 is invitation-only. Request your invitation to participate on the event page:

http://advtech.jsc.nasa.gov/t4t04.asp

We may not be able to extend an invitation to everyone, so look for an email confirmation after submitting your request.

SPEAK

Generally, we seek presentations with a technology focus, rather than reports of basic research on how humans learn. Visions of the attainable future of these technologies or discussion of how current technologies may be adapted to training applications are welcome. Please refer to the list of potential presentation topics for ideas found on page 2.

Given speaker permission, we will record the talks and publish them as streaming media talks. Previous event archives are online, so you can listen to more than 120 streaming media talks:

http://advtech.jsc.nasa.gov/presentation_portal.asp

Government employees, such as program managers or researchers, are especially encouraged to present information on:

- their technology-focused programs,
- their own research, and/or
- government technology needs.

CALL FOR SPEAKERS

- Prospective speakers: submit your request now for Training 2004!
- Presentations will last no more than 30 minutes (including Q&A).
- Technology demonstrations of the same length are welcome as well.

Commercial speakers should provide significant technical content rather than a sales-oriented presentation.

- Request your invitation to speak now: **http://advtech.jsc.nasa.gov/t4t04.asp**

We may not be able to extend an invitation to everyone who requests a presentation time. After submitting your request, look for an email confirmation and the *Speaker Guidelines*, a short file on planning and submitting your talk.

Below is a list of presentation topics to guide prospective speakers. This list is not all-inclusive, we look forward to learning about other innovative topics!

Basic Technologies & Capabilities

- Technologies that assemble and present learning content on demand and in real-time
- Technologies that adapt content to meet the varying needs and individual learning styles
- Technologies that allow intense simulation-based learning with distributed team members
- Technologies that support collaborative problem solving
- Systems that deliver individualized content via the Web
- Tools that use physiological data (eye tracking, EEG, or other data) to determine the instantaneous level of alertness, or tools that use orienting response or evoked potentials to determine whether lesson information was processed
- Tools that automatically collect reliable performance data, such as learner responses
- Multi-sensory interfaces, including those designed to teach particular physical or mental skills for task training
- Advanced user interfaces for commercially available Web-based training
- Natural language support for training
- Tools for student modeling in training, skill mapping, and for modeling/measuring teamwork
- Cognitive/behavioral models for synthetic adversaries/avatars that react like live humans in simulation-based training

Applications

- Portable or wearable training systems
- Hand-held personal data assistants or trainers
- Individual and team training
- Decision-making skills, critical thinking, and problem-solving skills
- Applications of intelligent agents in training technologies
- Distributed mission training for operations
- Just-in-time training systems that provide decision support while monitoring signals from other systems and representing the instantaneous state of the vehicle/instrument
- Tools that allow students to simulate, visualize, and interact with physical, chemical, biological, or engineering structures and processes for training purposes
- Embedded training for system operation, maintenance and repair, permitting just-in-time training to manage abnormal conditions

System Development

- Instructional design technologies
- Interoperability and reuse of training components
- Synthetic training environments and integration of simulation technologies into intelligent training
- Information analysis in training systems
- Training systems developed with greatly reduced cost and time
- Automated authoring support, easy authoring of content and control for non-programmers
- Intelligent systems with learning capabilities that extract content from human experts naturally (meaning that experts can be non-programmers)
- Tools that support automatic (or semi-automatic) capture of actions and thinking processes of expert operators of mission equipment or computer applications
- Tools that collect, capture, and tailor hardware/software design-time information for developing training materials for operators
- Tools that support continuous creation of material throughout a product's life cycle
- Tools that automatically incorporate and use engineering data and specifications (about equipment, operating modes, failures, and operations procedures) into training systems
- Public domain or open source software and tools for intelligent training systems
- Tools that provide effective and efficient access to large, heterogeneous, distributed, text and multimedia databases for on-the-fly assembly of training materials

Logistics

Training 2004 will be a small-scale, invitation-only event. Once you request an invitation to attend or speak, look for a confirmation email. Confirmed attendees will receive regular schedule updates and other information, including the *Information Pack*. This is a comprehensive guide to travel, directions, parking, and other logistics.

Our events emphasize learning and interaction, which can only take place if we have strong representation from relevant communities. We make every effort to announce events and to invite key players. But in the event that participant or speaker response is low, we reserve the right to cancel or change the date of an event. We recognize that travel plans must be made in advance, so any change of date will be made no less than 30 days before the event.

Important Note

Participants and speakers do not pay any registration fee, but are responsible for their own travel, hotel, and meal costs.

We do not use our resources on elaborate facilities, materials, or refreshments. This approach allows us to focus on networking and the content itself.

(continued on next page)

Contacts

Event Co-Chairs	
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Please contact us if you have any questions about Training 2004:

Technical Lead (invitations/schedule)	IT Lead (speakers/presentations)
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Past Events

Approximately twice a year, the Advanced Technology Integration Group at Johnson Space Center organizes technology-focused events. These highlight areas of technology that are critical to both NASA and other government agencies, especially the military.

- **Email us** to receive notices about future events
- Check the **Events section** of our site to learn about past and future events

Information from recent ATIG events are published online to reach the widest possible audience. Streaming media talks (audio synchronized with slide images) are available for past events:

- Smart Medical Technologies Summit 2004, http://advtech.jsc.nasa.gov/smt04.asp
- Human Performance 2003, http://advtech.jsc.nasa.gov/humanperf.asp
- BioE/Biotech 2003, http://advtech.jsc.nasa.gov/bioeng.asp
- Environmental Sentinels 2002, http://advtech.jsc.nasa.gov/enviroSent.asp
- Human Operations 2001, http://advtech.jsc.nasa.gov/humanOps.asp